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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,028	04/23/2004	Rolf Dittmann	61277-0015	7500

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EXAMINER

WIEHE, NATHANIEL EDWARD

ART UNIT PAPER NUMBER

3745

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/830,028

Applicant(s)

DITTMANN ET AL.

Examiner

Nathan Wiehe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-15 and 17-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3, 5-15 and 17-23 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see page 4, filed 7 March 2006, with respect to the rejection(s) of claim(s) 1-4,6,8,9,11,14-16 and 18-21 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gentile (3,631,672).

Applicant's arguments in regard to claim 5 have been fully considered but they are not persuasive. Applicant argues that claim 5 is not mere duplication of parts since the specification states the advantage of the use of two or more ejectors. However, the stated advantage, increased flow intensity, is an obvious outcome due to the use of additional ejectors and therefore the modification would have been obvious to one of ordinary skill in the art.

In regard to the Bangert reference, the previously cited US patent of Bangert claims priority to the PCT application published as WO 00/11324.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-8 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5-8 recites the limitation "of claim 4" in line 1. There is insufficient antecedent basis for this limitation in the claim since claim 4 has been cancelled.

Claim 18 recites the limitation "of claim 16" in line 1. There is insufficient antecedent basis for this limitation in the claim since claim 16 has been cancelled.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,6-9,11-12,14,15 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bangert (WO 00/11324) in view of Gentile (3,631,672). Bangert discloses a forced flow cooling means for use during the shutdown cooling period of a turbomachine (2). Bangert's cooling device induces a flow in an annular cavity (5), formed between inner casing (3) and outer casing (4). It is noted that the applicant invokes 35 U.S.C. 112, 6<sup>th</sup> paragraph by stating "means for" in claim 1. Bangert's disclosed means includes a fan (12), an injection hole (9) and an extraction point (10). Bangert's injection hole (9) and extraction point (10) are arranged at circumferentially symmetrical positions within the cavity (5). The fan (12) of Bangert's invention induces a tangentially oriented flow (S) by forcing motive fluid (L) into cavity (5) through hole (9) and removing the motive fluid (L) from extraction point (10), thus essentially circulating a closed volume. Bangert's cooling means produces substantially the same results as the claimed invention. Gentile discloses the use of ejectors (18) in a turbine case cooling

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system in order to provide a great amount of cooling air flow for a correspondingly small amount of motive fluid (Gentile column 4, lines 9-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cooling device of Bangert by including ejectors as taught by Gentile in order to provide a large cooling flow for a correspondingly small amount of motive fluid.

In regard to claims 14,15, 18-21 and 23, the method of operating a turbo machine would have been apparent from the modified invention of Bangert. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bangert in view of Gentile. The court decision of, *In re Harza*, 274 F.2d 669, 104 USPQ 378 (CCPA 160), established the legal precedent that "mere duplication of parts has no patentable significance unless a new and unexpected result is produced." Since the specification is silent as to any additional benefit of multiple ejectors arranged as claimed, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize two ejectors in the manner as claimed as an obvious duplication of parts in order to enhance the tangential flow of the motive fluid.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bangert in view of Gentile as applied to claim 6 above, and further in view of BBC (DE 507 129). The modified cooling device of Bangert discloses the invention substantially as claimed except for the specific geodetic locations of the ejector and extraction point. BBC discloses a turbomachine cavity cooling device with supply point and an extraction point at opposing geodetic highest and lowest points (1,2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the

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modified cooling device of Bangert by arranging the ejector and extraction point at opposing geodetic highest and lowest points in order to align the cooling flow with the temperature gradient.

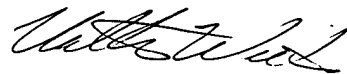
Claims 10, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bangert in view of Gentile as applied to claims 9, 11, and 14 above, and further in view of Huber (5,782,076). The modified cooling device of Bangert discloses the invention substantially as claimed except its explicit use to cool the combustion chamber and the motive fluid communicating with the hot-gas path. Huber discloses a closed loop turbine cooling system. Huber teaches the use of cooling air (52) directed into a cavity (55) between the outer shell and the combustor wall (13) for cooling the combustor. Huber also discloses opening (26) for drawing off motive fluid in fluid communication with the hot-gas path (70). Huber further discloses discharging cooling fluid (73) into the hot-gas path through leakage openings in passageways (100). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the modified cooling device of Bangert by arranging the device within the combustor and allowing flow communication with the hot-gas path, as taught by Huber, in order to provide shutdown cooling to the combustor and to provide cooling through out the entire turbomachine. In regard to claim 17, the method operating a turbomachine as claimed would have been apparent from the modified cooling device above.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Wiehe whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nathan Wiehe  
Examiner  
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4/24/06